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THIRTEENTH ANNUAL REPORT
OF THE
BOARD OF HEALTH
OF THE
CITY OF MEMPHIS,
(SHELBY COUNTY),
FOR THE YEAR 1891.

BY

S. A. ROGERS, M. D., PRESIDENT.

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1892.

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C. T. SMITH,

THOS. McORMICK

MISS
13th
1891

REPORT OF BOARD OF HEALTH.

Hon. W. L. Clapp, President:

I herewith submit to you the following report of the Board of Health for the year 1891, including reports of the Inspectors of Meat and Plumbing, as well as a tabulated statement of the number of deaths and contagious diseases reported to the Board of Health, with tables of comparison with previous years, which have been carefully prepared by the Secretary of the Board of Health, Dr. Wm. Krauss, from which it will be seen that the total number of deaths was 1454, or a ratio of 23.64 per thousand; of which 677 were white, a rate of 20.02 per thousand; 777 were colored, or 28.88 per thousand.

After taking out deaths by violence and deaths of strangers, we have left 1014, or a ratio of 16.48 per thousand. Of this number 457 were white, a ratio of 13.52 per thousand; 557 colored, a ratio of 20.10 per thousand.

Taking the total number of deaths, 1454, which includes strangers and deaths by violence, will be found an increase of 1.24 per thousand over the death rate of the preceeding years. This increase can be partly attributed to the prevalence of influenza in the month of December.

The total of deaths for the year was 1454, rate 22.40. The number of deaths for the first eleven months of the year was 1279, while December swells the list 175.

When actual deaths for the first eleven months and the deaths December are calculated upon an average of the preceding eleven months, thus eliminating the effect of the influenza, we have, whites 644, ratio 19.16; colored 750, ratio 27.07; total 1394, ratio 22.66; against whites 638, ratio 19.33; colored 706, ratio 26.15; total for the preceding year (1890), 1344, ratio 22.40.

The above calculations are based upon an estimate of 60,000 for the year 1890 (figures of my predecessor), and 61,500 for the year 1891, thus allowing an increase of 1500 for the year.

I also wish to state in this connection that these figures are estimates only. The official census taken by the Government in 1890

26331

gives the population of the ten wards (not including the annexed suburbs) as 50,313. This census has never been received by the public as correct; 60,000 to 62,000 being nearer correct in the opinion of the public.

The number of cases of scarlet fever and diphtheria was much in excess of the previous year. During the month of May the Board of Health decided to exert the powers vested in it, and go one mile beyond the city limits to enforce the same regulation regarding the reporting, placarding, and fumigating for these diseases, as is enforced in the city limits; the result of which was a marked diminution in the number of cases.

While these diseases prevail more or less throughout the whole country, and are not particularly localized here, I do attribute their prevalence here, to some extent, to the following causes;

1. To our milk supply, which, as yet, has not the proper safeguards thrown around it, though much better regulated than heretofore.

2. To our water supply, which, in many instances, is obtained from leaky cisterns. In this connection, I will state that Dr. Krauss, Secretary of the Board of Health, has devoted much time and labor to chemically analyzing the waters of these cisterns, and upon his condemnation a large number of them have been filled up, and many others cleaned out and repaired.

I would also call attention to our chief water supply—the artesian, which is absolutely pure as it passes through the delivery pipes of the company. Frequent tests have proven this, but the water becomes contaminated, in many instances, before it reaches the consumer.

This is, I believe, due partly to dead ends in the company's mains, where the water becomes stagnated and foul, but principally to a bad condition of the house connection pipes, which in many instances have done service for years, becoming rotten and impregnated with a deleterious matter from the earth surrounding them. In proof of which, it is a noticeable fact that recently made connections deliver a much purer quality of water than the old ones.

3. Bad plumbing has also played an important role in generating hiphtheria and scarlet fever as well as kindred diseases, but it should here be noted that a marked improvement is going on in this direction under the supervision of the City Inspector of Plumbing, Wm. Lunn, who has been active and zealous in the discharge of his duties.

Influenza has prevailed here through the months of November and December, but was not marked by the high mortality noted in

some of our Northern cities, though it swelled our mortuary report, especially in the month of December.

The sewers this year have been increased 20,735 lineal feet. Of this amount 14,633 feet were laid in the northern part of the city, constituting what is known as the Chelsea system, and has already borne good fruit.

Regarding the garbage service, I would state that its effectiveness has much increased during the past year, owing partly to an increase in the number of teams used, but principally to the fact that two additional dumps have been placed along the river bank—one at the foot of Auction street and one at the foot of Webster street.

This work was done at the suggestion and under the supervision of the Health Officer, D. F. Jackson. With these two additional dumps, we have a total of three; the one heretofore used was located at the foot of Beale street, and the contents of all the garbage and earth boxes had to be hauled through the heart of the city to reach the river, which entailed a long haul upon the service, as well as distributing nauseous and unhealthy gases throughout the city.

Before closing my report, I would recommend :

1. That an inspector of milk be appointed, whose duty it shall be to visit and inspect the dairies and cows, as well as the milk. That all milk dealers be compelled to pay for, and take out a license, and said license to be of sufficient cost to debar all who are not regularly engaged in the business, and also to pass such ordinances as will revoke the license of any one detected selling unwholesome milk, and to memorialize the Legislature on this matter, if need be, to legalize it. A vigorous application of this policy, I believe, would demonstrate its value on our health records.

2. That our garbage service be increased. At present there are only 29 carts and 37 mules. The number of carts should be increased by at least 10, which, with the corresponding increase in live stock, I believe, would meet all legitimate demands.

I will take this occasion to state that for a time, at least, we may expect to haul our garbage to the river, for as yet no more satisfactory solution can be offered us for disposing of our garbage.

Cremation, which has been discussed by the Board of Health as well as your honorable body, while theoretically the ideal disposition, cannot as yet claim to have practically reached such a sphere.

3. That the sewer system be extended as rapidly as possible to embrace the entire city.

4. That the suits of injunction against this Board, restraining them from tearing down condemned houses, be pushed to a speedy

termination, and if the courts decide that your Honorable Council and this Board have not the power to remove unsanitary structures, then let the State Legislature be memorialized to enact such laws as will confer this power upon your Honorable Council and the Board of Health.

5. That such legislation be procured as will enable your honorable body to regulate the establishment and location of slaughter houses, and that abattoirs be established at some point along the river, below the city, as has been suggested by Dr. Thornton. The slaughter houses, as now regulated, are a menace to public health.

6. That a new hospital be erected in accordance with all sanitary regulations. This cannot be too strongly urged. The present one is too well known to need comment.

7. That two free medical dispensaries be established and so located as to be in easy reach of the people. The location of the present one is out of the way and inconvenient.

Before closing, I must call your attention to the condition of Bayou Gayoso, and recommend that you take such steps as have time and again been suggested by Dr. Thornton in his annual reports to this Council. A full account of estimates of cost, etc., can be found in the City Engineer's office.

Yours respectfully,

SHEP. A. ROGERS, M. D.,
President Board of Health.

TABLE I.
Death Rate Per Thousand Population.

Death Rate in 1891—Estimated population, 61,500; white, 33,800; colored, 27,700; total number of deaths, 1,454.					Death Rate in 1890—Estimated population, 60,000; white, 33,000; colored, 27,000; total number of deaths, 1,344.				
Deaths.		Ratio to 1,000 Population.		Ratio to 1,000 Population.	Deaths.		Ratio to 1,000 Population.		Ratio to 1,000 Population.
White	Colored	White	Colored	Total White and Colored.	White	Colored	White	Colored	Total White and Colored.
677	777	20.02	28.88	23.64	638	706	19.33	26.15	22.40

TABLE II.
Death Rate in 1891.

Calculating December on average of eleven preceding months, thus deducting deaths from epidemic of Influenza, prevalent in this month:

Deaths, White	644
Colored	750
Total	1,394
Ratio White per 1,000 population	19.16
Ratio Colored per 1,000 population	27.07
Total per 1,000 population	22.66

TABLE III.

Ratio of Mortality of the Resident Population Proper.

Only deaths of non-residents and deaths by violence eliminated.

Ratio of mortality of the resident population in 1891. Population, 61,500.					Ratio of mortality of the resident population in 1890. Population, 60,000.				
Deaths of Residents prop'r '91		Ratio to 1,000 Population.		Ratio to 1,000 Population.		Deaths of Residents prop'r '90		Ratio to 1,000 Population.	
White ...	Colored..	White ...	Colored..	Residents proper White and Colored.		White ...	Colored..	White ...	Colored..
				Deaths...	Ratio....				
457	557	13.52	20.10	1,014	16.48	469	514	14.26	19.03
								982	16.21

TABLE IV.

Showing the number of deaths of non-residents—composed chiefly of laborers employed in Mississippi and Arkansas; also deaths by violence. Whites, 220; colored, 220; total, 440.

	White	Colored	Total
Deaths in city of non-residents	128	108	236
Deaths in Hospital of non-residents.....	55	71	126
Deaths by violence.....	37	41	78
Total	220	220	440

TABLE 5.
MORTALITY REPORT FOR 1891.

By Ages.

Cause of Death	Totals by Cause		1 year	Under 1 to 5	5 to 15	15 to 25	25 to 50	50 to 75	Over 75						
	W	C								W	C	W	C	W	C
A. GENERAL DISEASES															
Scarlet Fever	9	2	...	4	1	4	1	...	1	...	...	...	...	...	...
Measles .....	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...
Whooping Cough.....	5	9	4	6	...	3	1	...	...	...	...	...	...	...	...
Diphtheria	19	14	...	15	6	4	5	2	...	1	...	...	...	...	...
Cholera Infantum	18	19	13	12	5	7	...	...	...	...	...	...	...	...	...
Typhoid Fever	24	21	...	...	3	4	7	8	10	5	4	4	...	...	...
Typho-Malarial Fever	1	10	...	1	...	2	...	4	...	3	1	...	...	...	...
Malarial Diseases.....	25	28	4	7	4	9	5	3	2	9	3	5	2	...	...
Congestion	41	31	9	7	2	7	2	5	1	2	22	6	5	4	...
Influenza	13	4	1	1	...	1	1	1	1	3	...	5	...	2	...
Phthisis	80	136	...	2	2	1	6	13	37	53	82	12	7	1	...
Tabes Mesenterica	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Tubercular Meningitis	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Scrofula .....	...	2	...	1	1	...	...	...	...	...	...	...	...	...	...
General Dropsy	3	21	...	1	2	...	...	...	1	2	9	1	8	...	...
Puerperal Fever	1	3	...	...	...	...	...	1	1	...	2	...	...	...	...
Septicæmia	2	2	...	...	...	...	1	...	1	...	1	...	1	...	...
Uræmia	1	1	...	...	...	...	...	...	...	1	1	...	...	...	...
Erysipelas	4	...	1	...	...	...	...	1	...	1	...	1	...	...	...
Pernicious Anaemia.....	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Diabetes Mellitus	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Syphilis	1	3	...	1	...	...	...	...	...	1	1	...	1	...	...
Rheumatism	2	2	...	...	...	...	...	...	...	1	1	1	1	...	...
Cancer of Stomach.....	...	2	...	...	...	...	...	...	1	...	1	...	...	...	...
“ Breast .....	...	2	...	...	...	...	...	...	...	...	1	...	1	...	...
“ Lung .....	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...
“ Uterus	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...
“ Bowels	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
“ Liver	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
“ Unspecified	2	4	...	...	...	...	...	...	...	...	3	2	1	...	...
Sarcoma-Renal	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Tumor-Abdominal	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Total General Diseases..	261	319	32	39	31	41	16	29	28	59	110	121	41	30	0
B LOCAL DISEASES.															
ba.—NERVOUS.															
Trismus Nascentium.....	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...
Congestion Brain.....	26	9	11	2	6	3	1	...	1	6	2	2	1	...	...
Meningitis	10	10	5	3	3	4	2	...	1	...	2	...	...	...	...
Cerebritis	3	2	2	...	1	...	...	...	...	1	1	...	...	...	...
Alcoholism	9	1	...	...	...	...	...	...	...	7	1	2	...	...	...
Paralysis	5	6	...	...	1	...	...	2	1	...	3	2	1	1	...
Convulsions	6	27	5	20	1	6	...	1	...	...	...	...	...	...	...

MORTALITY REPORT FOR 1891—Continued.

By Ages.

Cause of Death.	Totals by Cause		Under 1 Year	1 to 5		5 to 15		15 to 25		25 to 50		50 to 75		Over 75	
	W	C		W	C	W	C	W	C	W	C	W	C	W	C
LOCAL—Continued.															
Paraplegia.....	2	..	..	..	..	..	..	..	..	2	..	..	..	..	..
Cerebral Hemorrhage....	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Chorea.....	1	1	..	..	..	1	1	..	..	..	..	..	..	..	..
Tetanus.....	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..
Cerebral Softening.....	3	1	..	..	..	..	..	..	..	..	1	1	..	2	..
Apoplexy.....	6	4	..	..	..	..	..	..	..	2	4	3	..	1	..
Epilepsy.....	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..
Insolation.....	1	1	..	..	..	..	..	..	..	..	..	1	1	..	..
Neurasthenia.....	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Total Nervous.....	78	64	27	25	10	15	4	2	0	4	19	13	14	4	4
§ 2.—RESPIRATORY.															
Pulmonary Congestion.....	6	2	1	1	1	..	..	..	..	1	1	3	..	..	..
Pulmonary Hemorrhage....	1	1	..	..	..	..	..	..	..	..	1	1	..	..	..
Pleurisy.....	2	4	..	..	..	..	1	..	1	2	2	..	..	..	..
Bronchitis.....	13	9	2	2	2	1	..	1	..	2	3	5	1	2	1
Asthma.....	2	4	..	..	..	..	..	..	..	1	1	1	2	..	1
Laryngitis.....	6	8	3	5	2	1	1	2	..	..	..	..	..	..	..
Pneumonia.....	45	70	6	10	3	8	2	3	2	14	19	16	13	12	7
Cirrhosis of Lungs.....	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..
Pulmonary Abscess.....	..	3	..	..	..	..	..	..	..	..	2	..	1	..	..
Total Respiratory.....	75	102	12	18	8	10	3	7	2	15	25	26	23	17	2
§ 3.—CIRCULATORY.															
Cardiac Insufficiency.....	29	21	3	1	..	1	..	3	1	11	6	12	12	..	..
Mitral Insufficiency.....	2	1	..	..	..	1	..	..	..	1	1	..	..	..	..
Valvular Insufficiency.....	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Heart Clot.....	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Endocarditis.....	2	1	..	..	..	..	..	..	..	1	1	1	..	..	..
Pericarditis.....	1	2	..	..	..	1	..	..	..	..	2	..	..	..	..
Hemorrhage.....	1	1	1	..	..	..	..	..	..	..	1	..	..	..	..
Cardiac Dropsy.....	..	8	..	..	..	..	1	1	..	..	5	..	1	..	..
Fatty Degeneration of Heart.	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Total Circulatory.....	38	34	4	1	0	1	2	1	3	2	14	16	15	13	0
§ 4.—DIGESTIVE.															
Dentition.....	1	21	1	14	..	7	..	..	..	..	..	..	..	..	..
Aphtha.....	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Gastritis.....	6	1	1	..	..	..	..	1	..	2	1	2	..	..	..
Enteritis.....	8	10	1	4	1	3	..	1	..	2	1	3	2	..	..
Entero-colitis.....	10	6	5	2	2	3	..	1	..	..	1	2	..	..	..
Congestion Bowels.....	..	4	..	3	..	1	..	..	..	..	..	..	..	..	..
Ulceration Bowels.....	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Hemorrhage Bowels.....	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Intestinal Obstruction.....	2	..	..	..	..	..	..	..	..	2	..	..	..	..	..
Typhlitis.....	..	1	..	..	..	..	..	1	..	..	..	..	..	1	..
Appendicitis.....	2	..	..	..	..	..	..	1	..	1	..	..	..	..	..
Diarrhea.....	21	17	2	1	1	3	1	1	1	4	5	11	6	1	1

MORTALITY REPORT FOR 1891—Continued.

By Ages.

Cause of Death.	Totals by Cause		Under 1 Year		1 to 5		5 to 15		15 to 25		25 to 50		50 to 75		Over 75	
	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C
LOCAL—Continued.																
Dysentery.....	31	36	4	6	7	11	1	1	4	13	10	6	3	1	1	1
Peritonitis.....	15	11	1	1	1	1	1	1	4	9	5	1	1	1	1	1
Jaundice.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Corrhosis Liver.....	12	1	1	1	1	1	1	1	1	6	1	6	1	1	1	1
Abscess Liver.....	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atrophy Liver.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hepatitis.....	4	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1
Total Digestive.....	118	171	16	30	11	29	2	1	12	9	42	25	32	14	3	3
8 5.—OTHER LOCAL DISEASES																
Albuminuria.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nephritis.....	11	7	1	1	1	1	1	1	4	1	2	3	3	2	1	1
Pyelitis.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cystitis.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Stone in Bladder.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Stricture.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Perineal Abscess.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gangrene.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rickets.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Abscess.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vomiting of Pregnancy.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Parturition.....	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pelvic Abscess.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Other Local.....	19	13	0	1	1	1	1	0	7	3	4	6	5	2	1	0
Total Class B (Local).....	328	324	59	75	30	56	12	11	24	33	104	86	89	50	10	13
C																
Diseases not Necessarily Associated with Local or General Lesions.																
Unknown.....	7	27	1	7	1	8	1	1	1	4	7	2	3	1	1	1
Neglect.....	1	6	1	2	1	4	1	1	1	1	1	1	1	1	1	1
Marasmus.....	1	9	1	6	1	3	1	1	1	1	1	1	1	1	1	1
General Debility.....	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Exhaustion.....	7	9	1	1	1	1	1	1	3	4	4	1	1	2	1	1
Inanition.....	19	16	16	13	3	3	1	1	1	1	1	1	1	1	1	1
Congenital Lesions.....	1	5	1	5	1	1	1	1	1	1	1	1	1	1	1	1
Senility.....	14	19	1	1	1	1	1	1	1	1	1	1	8	5	6	14
Morphine Habit.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total.....	51	93	19	34	3	18	0	1	0	4	9	12	12	9	8	15
D																
SUDDEN AND VIOLENT DEATHS.																
Accident, Drowned.....	6	4	1	1	1	1	1	1	2	1	3	2	1	1	1	1

MORTALITY REPORT FOR 1891—Continued.

By Ages.

Cause of Death.	Totals by Cause		Under 1 year		1 to 5		5 to 15		15 to 25		25 to 50		50 to 75		Over 75	
	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C
VIOLENT DEATHS.																
<i>—Continued.</i>																
Accident, Fall.....	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Accident, Burn.....	2	5	..	..	2	3	1	..	..	..	..	..	..	..	..	1
Accident, Railroad.....	5	2	..	..	..	..	..	..	1	3	1	2	..	..	..	..
Accident, Electric Shock.....	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Accident, Run Over.....	2	4	..	..	..	1	1	1	1	..	2	1	..	..	..	..
Accident, Suffocation.....	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Accident, Unspecified.....	4	5	..	..	..	1	1	1	..	2	3	..	1	..	..	..
Shock—Surgical & acd't.....	2	1	..	..	..	..	..	1	2	..	..	..	..	..	..	..
Overdose Morphine, Chl. etc.	10	3	2	..	..	..	..	2	..	5	1	1	2	..	..	..
Pistol Shot.....	2	8	..	..	..	..	..	..	1	2	7	..	..	..	..	..
Knife Wound.....	3	3	..	..	..	..	..	..	..	2	..	..	1	..	..	..
Other Violent Deaths.....	3	3	..	..	..	..	..	1	3	2	..	..	..	..	..	..
Total.....	37	41	2	1	1	3	3	4	5	5	18	23	7	4	0	1
Total all Causes.....	677	777	112	149	66	118	31	45	57	101	241	242	149	93	21	29

	W	C
Still Births.....	37	46
Premature Births.....	21	14

TABLE 6.

MORTALITY REPORT FOR 1891—Continued.

Ages By Months.

	Under 1 Year		1 to 5		5 to 15		15 to 25		25 to 50		50 to 75		Over 75		Totals	
	W	C	W	C	W	C	W	C	W	C	W	C	W	C	w	c
January.....	7	5	4	2	3	6	11	20	19	16	8	2	2	52	53	
February.....	5	14	2	3	1	5	8	4	29	18	11	9	4	56	57	
March.....	7	13	1	8	2	2	5	10	23	23	13	10	1	4	52	70
April.....	5	6	5	8	4	5	9	8	14	16	10	6	1	1	48	50
May.....	19	15	5	5	4	4	2	4	14	19	7	12	1	2	52	61
June.....	19	18	8	16	1	7	4	7	14	16	7	4	4	1	57	69
July.....	11	21	11	15	5	5	5	9	11	23	9	2	1	1	53	71
August.....	11	16	12	18	4	4	6	6	18	13	10	7	3	3	61	67
September.....	11	8	7	12	1	1	4	3	15	28	14	7	2	2	52	61
October.....	5	5	4	15	2	2	4	15	24	19	12	9	2	1	53	66
November.....	6	13	6	9	1	3	7	9	23	22	11	6	1	1	55	63
December.....	6	15	1	9	3	6	3	15	36	26	29	13	8	7	86	89
Totals.....	112	149	66	118	31	45	57	101	241	242	149	93	21	29	677	777

TABLE 7.
MORTALITY REPORT FOR 1891—Continued.
Principal Cause of Death, by Months.

Cause of Death.	January ..	February .	March	April	May	June	July	August....	September.	October..	November.	December.	Total
Diphtheria	5	1	2	..	1	3	3	8	6	1	1	2	33
Malarial Diseases	4	2	1	2	3	3	7	11	9	6	4	1	53
Congestion	1	5	6	3	8	11	10	9	6	4	5	4	72
Typhoid Fever .....	..	..	2	7	1	..	1	5	7	9	4	9	45
Tubercular Diseases	18	15	26	22	16	17	15	10	14	24	21	21	219
Other General Diseases, in- cluding Cholera Infantum.	7	10	9	13	18	22	16	19	8	8	11	18	157
Congestion of Brain	4	1	..	3	5	6	2	5	3	2	3	2	36
Convulsions, except Puerperal	1	3	4	5	4	3	3	3	..	..	3	4	33
Other Nervous Diseases	4	6	9	5	4	9	5	6	5	8	6	7	74
Circulatory Diseases	3	6	8	3	8	2	2	5	13	8	5	9	72
Pneumonia	14	15	15	9	4	2	2	2	2	3	11	36	115
Other Lung Diseases, except Tubercular	10	5	8	6	6	4	2	1	1	1	8	11	63
Dysentery	1	2	3	..	6	8	12	6	11	9	5	4	67
Diarrheal Diseases, except Cholera Infantum	3	8	5	5	5	15	16	12	6	8	9	9	101
Other Digestive Diseases	8	7	2	5	5	4	7	1	3	4	6	7	59
Unknown	6	1	10	1	3	..	3	..	3	4	1	1	34
Violent Deaths	7	8	3	5	5	6	7	5	3	8	7	14	78
All Other Causes	11	18	19	4	1	11	11	20	13	12	8	15	143
Total,	105	113	122	98	139	126	124	128	113	119	118	175	1454

TABLES 8 AND 9.
MORTALITY REPORT FOR 1891—Continued.
By Ages.

	January...		February		March....		April.....		May.....		June.....		July.....		August....		September.		October...		November.		December.		Totals....	
	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C
Adult Males.....	23	19	29	25	26	23	20	13	12	17	15	8	14	16	16	14	22	17	27	23	22	15	42	30	268	220
Adult Females.....	14	19	15	9	15	21	10	14	10	19	13	17	10	13	15	12	9	20	12	16	14	19	32	24	130	203
Minor Males.....	11	7	8	11	6	18	10	16	12	23	18	26	14	23	11	12	11	13	14	15	8	21	139	191		
Minor Females.....	4	8	4	12	5	8	13	14	13	17	21	11	16	18	10	12	3	14	5	14	4	14	102	163		
Total Males.....	34	26	37	36	32	41	30	23	28	29	27	31	32	43	30	37	33	29	38	36	30	50	51	405	411	
Total Females.....	18	27	19	21	20	29	18	27	24	32	30	38	21	29	31	30	19	32	15	30	19	33	36	38	233	366
Total Adults.....	37	38	44	34	41	44	39	27	22	36	28	25	24	29	31	26	31	37	39	29	36	34	74	54	396	423
Total Minors.....	15	15	14	23	11	26	18	23	30	25	29	44	29	42	30	41	21	24	14	27	19	29	12	35	241	354

By Social Relation.

	January...		February		March....		April.....		May.....		June.....		July.....		August....		September.		October...		November.		December.		Totals....	
	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C
Single Males.....	15	11	16	14	16	21	18	15	18	16	17	24	19	28	20	24	16	15	19	19	18	19	15	27	207	233
Single Females.....	5	5	13	9	11	8	20	15	14	18	23	13	17	16	20	9	15	3	14	6	20	6	16	113	198	
Married Males.....	8	11	14	8	10	4	6	3	8	3	4	4	4	4	4	5	6	12	9	8	3	15	12	83	93	
Married Femals.....	7	7	7	4	6	5	6	4	6	7	4	5	8	12	6	12	7	8	6	8	13	7	84	80		
Widowers.....	2	4	4	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	3	3	4	2	23	17		
Widows.....	6	5	5	1	4	7	4	5	7	3	3	2	2	1	2	3	1	4	5	5	4	13	12	55	44	
Unknown Males.....	9	6	6	7	7	10	7	2	6	4	6	2	7	9	6	8	9	1	8	7	8	16	10	95	78	
Unknown Females.....	2	2	3	1	5	1	1	1	5	2	8	1	4	2	2	1	4	1	3	2	1	4	3	17	34	
Totals by Months.....	52	56	56	57	52	70	48	50	52	61	57	69	53	71	61	67	52	61	53	66	55	63	86	89	677	777

By Social Relation.

TABLE II.
MORTALITY REPORT FOR 1891—Continued.
By Wards.

	January.....		February....		March		April		May.....		June.....		July		August.....		September.		October.....		November.		December .		Total.....	
	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C
First Ward	7	3	9	3	4	6	2	4	7	6	2	1	6	4	5	3	5	4	1	2	5	2	4	3	5	7
Second Ward	4	6	1	1	5	1	2	1	4	2	1	3	2	2	2	1	5	3	5	1	4	1	6	5	4	1
Third Ward	1	1	2	3	4	1	1	1	1	3	3	2	1	2	2	2	2	2	1	1	1	1	1	1	22	
Fourth Ward	1	5	1	1	1	4	1	1	1	1	2	1	4	4	3	1	3	1	2	2	2	2	1	1	26	
Fifth Ward	4	3	12	2	16	8	2	9	7	7	1	10	5	9	2	6	2	9	2	2	9	2	11	14	31	
Sixth Ward	3	1	1	4	1	3	2	4	1	4	1	2	1	3	4	2	4	2	1	3	2	6	8	6	39	
Seventh Ward	4	6	1	7	3	7	3	10	8	6	6	10	4	10	3	11	5	5	2	8	7	6	14	16	60	
Eighth Ward	6	8	9	5	5	7	13	9	4	6	6	12	4	7	12	5	6	12	8	7	7	9	14	8	94	
Ninth Ward	4	5	5	6	7	10	4	3	10	6	11	9	9	7	11	7	6	11	6	7	7	13	9	93		
Tenth Ward	7	10	8	12	6	14	4	10	7	14	8	22	13	16	6	20	5	13	7	13	8	12	19	13	88	
City Hospital	6	10	5	7	6	7	5	3	3	8	1	3	1	9	2	6	3	2	11	13	3	8	15	54	91	
St. Joseph's Hospital	6	...	3	...	6	...	7	...	1	...	6	...	5	...	7	...	8	...	6	...	9	...	6	...	72	
Total by Months	52	53	56	57	52	70	48	50	52	61	57	69	53	71	61	67	52	61	53	66	55	63	86	89	677	777
Grand Total	105	113	122	98	113	126	124	128	119	118	175	1454	105	113	122	98	113	126	124	128	119	118	175	1454	105	113

TABLE 12.
Total Deaths for the Past Sixteen Years.
(Non-residents included in totals.)

	White	Colored	Non-Resi- dents	Total.
1876	665	610	75	1,275
1877	644	613	158	1,257
*1878	2,427	1,539	155	3,965
*1879	832	757	104	1,589
†1880	472	479	130	961
1881	665	806	99	1,471
1882	420	701	228	1,121
1883	610	793	308	1,403
1884	756	921	419	1,677
1885	666	818	296	1,484
1886	676	749	290	1,425
1887	673	796	396	1,469
1888	745	795	478	1,540
1889	657	665	479	1,322
1890	638	706	280	1,344
1891	677	777	364	1,454

TABLE 13.
Showing a General Summary of Deaths—White and Colored—
from Tubercular Diseases for the Past Nine Years.

Year	January . .		February . .		March . . .		April		May		June		July		August		September . .		October		November . . .		December . . .		Totals
	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	
1883	14	10	9	8	9	17	2	11	2	9	7	15	7	6	3	10	2	7	4	14	6	13	7	14	206
1884	7	13	13	9	4	13	7	15	5	6	5	7	7	10	6	13	4	11	10	8	12	10	17	12	223
1885	18	14	14	6	15	19	9	12	4	12	5	12	9	8	4	7	4	12	6	8	9	9	5	4	225
1886	8	5	8	16	15	19	10	5	4	12	6	14	8	13	2	10	5	14	9	16	7	10	10	10	236
1887	1	9	7	15	9	19	4	9	4	8	8	10	5	15	2	6	8	12	6	8	4	8	5	18	200
1888	5	6	7	12	12	10	11	8	10	18	4	14	4	14	7	9	3	5	8	10	10	9	8		208
1889	12	12	4	17	4	11	13	17	9	9	4	11	3	3	5	7	4	4	9	3	3	7	6	6	183
1890	6	15	10	12	6	11	3	9	6	10	12	14	8	11	7	9	12	18	8	9	2	9	4	9	208
1891	10	8	9	6	7	19	14	8	3	13	4	13	3	12	2	8	4	10	8	19	13	10	11		216

TABLE 16.

Showing a General Summary of Deaths—White and Colored—
From Diphtheria, for the Past Ten Years.

Years.....	January..		February		March...		April....		May.....		June....		July.....		August..		Sept.....		October..		Nov.....		Dec.....		Total.....
	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	W	C	
1882	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1	1	4	...	...	9
1883	...	1	1	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	1	...	...	...	...	6
1884	2	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	3	...	4	1	2	...	...	...	15
1885	...	...	...	...	...	...	...	...	...	1	...	...	1	2	...	...	...	...	...	...	1	2	...	...	7
1886	2	...	2	...	...	...	...	...	1	4	1	5	2	5	10	1	4	4	3	5	2	4	...	...	57
1887	...	...	1	...	...	...	2	1	...	1	1	3	...	2	5	4	3	8	4	4	...	4	1	...	44
1888	4	...	...	1	1	1	...	...	...	...	1	1	...	3	1	1	1	1	4	...	...	...	...	...	21
1889	...	...	1	...	...	...	...	1	...	...	...	...	1	...	5	3	...	2	5	1	...	...	...	...	21
1890	...	...	...	1	...	...	...	...	...	...	2	...	2	...	2	4	4	2	4	7	2	...	4	1	33
1891	2	3	1	...	2	...	...	...	1	...	2	1	2	1	5	3	4	2	1	...	1	...	2	...	33

TABLE 17.

Showing Number of Contagious Diseases—White and Colored .
Reported in 1891.

Months	Scarlet Fever		Diphtheria		Small Pox	
	W	C	W	C	W	C
January	16	...	3	4	...	...
February	15	...	3	2	...	...
March	23	...	3	1	...	...
April	18	3	3	...	...	1
May	35	4	2	...	...	...
June	16	5	3	4	...	1
July	12	3	11	6	...	...
August	28	3	8	4	...	...
September	16	...	7	5	...	...
October	12	2	8	1	...	...
November	16	4	4	2	...	...
December	14	1	4	3	...	...
Totals	221	25	59	32	...	2

DISPENSARY RECORDS.

TABLE 18.

Patients Treated at City
Dispensary.

January	401
February	367
March	401
April	356
May	366
June	228
July	334
August	331
September	422
October	311
November	260
December	301

Total 4,143

Number of children vaccinated 2083

TABLE 19.

Patients Sent to City
Hospital.

January	161
February	131
March	127
April	84
May	58
June	52
July	103
August	122
September	147
October	111
November	136
December	111

Total 1,343

TABLE 20.

Number of Specimens of Drinking Water Examined at Secre-
tary's Office from July 15 to December 31, 1891, Inclusive.

Specimens Cistern Water Examined	67
Specimens Cistern Water Condemned	30
Specimens Well Water Examined	28
Specimens Well Water Condemned	24
Specimens Hydrant Water Examined	30
Specimens Hydrant Water Condemned	0

TABLE 21.

Inventory of Stock, Wagons, Carts, etc., Employed in the
Garbage Service.

Mules	37	Writing Desks	1
Open Carts	21	Dump Boats	1
Air-tight Carts	8	Dump Stations	2
Two-wheeled Buggies	2	Street Sweeper	1
One-Horse Wagons	1	Bells	1
Stoves	5	Average number of men employed	
Two-horse Wagon	1	in garbage service during year	32
Clock	1	Harness and paraphernalia complete.	

TABLE 22.
FINANCIAL REPORT FOR 1891.

Pay Roll of Board of Health.....	\$ 4,797 90
Pay Roll of Sanitary Police.....	3,547 00
Pay Roll of Sanitary Force.....	13,420 21
Drugs for Dispensary.....	395 96
New Stock.....	1,255 00
Stock Feed.....	3,532 87
Wagon and Harness.....	406 35
Shoeing and Repairing Wagons.....	1,160 13
Stable and Dump Boat.....	1,215 41
Printing and Stationery.....	269 63
Fuel and Ice.....	49 47
Public Vaccination.....	168 70
Office Expenses.....	143 96
Water.....	28,341 82
Fumigating.....	18 50
Quarantine.....	10 00
Amount Expended by Engineer Department.....	908 68
Total Amount.....	\$56,641 59

TABLE 23.
STATEMENT OF WORK DONE.

Sanitary Police Report.

Number of Houses Inspected.....	15,894
Number of Houses Cleaned.....	3,050
Number of Yards Inspected.....	15,593
Number of Yards Cleaned.....	3,979
Number of Water-closets Inspected.....	14,910
Number of Water-closets Cleaned.....	3,431
Number of Privy-vaults Inspected.....	290
Number of Privy-vaults Cleaned.....	147
Number of Cellars Inspected.....	689
Number of Cellars Cleaned.....	242
Number of Cisterns Inspected.....	635
Number of Cisterns Cleaned.....	164
Number of Wells Inspected.....	173
Number of Wells Cleaned.....	49
Number of Stables Inspected.....	760
Number of Stables Cleaned.....	319
Number of Alleys Inspected.....	654
Number of Alleys Cleaned.....	229
Number of Ponds Inspected.....	89
Number of Ponds Cleaned.....	53
Number of Houses Fumigated.....	393
Number of Other Nuisances Abated.....	3,793
Number of Warrants Issued.....	430

TABLE 24.
STATEMENT OF WORK DONE.—*Continued.*

Report of House-to-House Inspectors, April 27 to May 27, 1891.

Number of Houses Inspected.....	6,768
Number of Cellars and Basements Inspected.....	930
Number of Sinks Inspected.....	4,133
Number of Water-closets Inspected.....	5,864
Number of Earth-boxes Inspected.....	1,224
Number of Vaults Inspected.....	126
Number of Hydrants Inspected.....	3,811
Number of Cisterns Inspected.....	2,607
Number of Wells Inspected.....	437
Number of Orders Given to Turn Water on Closets.....	414
Number of Orders Given to Repair Pipes.....	205
Number of Sinks Repaired.....	87
Number of Sinks Repaired and Filled.....	97
Number of Vaults Cleaned and Disinfected.....	18
Number of Wells Filled or Repaired.....	24
Number of Orders Issued in toto.....	1,177
Number of Orders Complied With.....	912
Number of Miscellaneous Orders.....	252
Number of Warrants Issued.....	54

TABLE 25.
Garbage Service Report.

* Number of Loads of Garbage Removed to Dump.....	26,506
Number of Loads of Night Soil Removed to Dump.....	3,636
Number of Loads of Dirt, Bats, etc., Removed to Dump.....	7,060
Number of Dead Dogs Removed to Dump.....	1,579
Number of Other Dead Animals Removed to Dump.....	356
Number of Transient Loads Removed to Dump.....	4,231
Number of Telephone Orders for Garbage Cart.....	438
Number of Telephone Orders for Earth Cart.....	247

TABLE 26.

SUMMARY OF WORK—SEWER DEPARTMENT.

There have been constructed 20,935 lineal feet of sewers, with a total of 2,039 house connections.

There have been connected with the sewers:

	New Fixtures	Old Fixtures Remodeled
Water Closets	925	369
Slop Sinks	817	236
Wash Stands	107	34
Bath Tubs	95	58
Urinals	73	24
Wash Tubs	3	....
Catch Basins	9	....
Latrines	8	2
Ventilating Pipes .....	....	5
86 Obstructions Removed, Costing		\$ 238 82
New Lines, 1891		20,114 74
Maintenance		7,977 83
Drains		3,025 41

The system and service of the whole system to date, January 1, 1892, is as follows:

New Sewer Lines	49.13 miles:
Old Sewer Lines (bought by T. D.)	4.1 miles:
Drains	0.51 miles:
Flush Tanks	253
Manholes	371
Catch Basins	35
Water Closets	9202
Slop Sinks	6504
Bath Tubs	1026
Wash Stands	831
Urinals	612
Laundry Tubs	95
Latrines	12

TABLE 27.
PLUMBING INSPECTOR'S REPORT.

Drs. Rogers and Krauss, President and Secretary of Board of Health :

GENTLEMEN—I respectfully state my report to the Legislative Council for the year 1891. There have been added to the sewers the following new plumbing fixtures, and each and every building or dwelling has a separate house connection to the main sewer, all according to the law.

Total amount of new fixtures :

Water Closets.....	925
Slop Sinks.....	817
Wash Stands.....	107
Urinals.....	63
Catch Basins.....	9
Laundry Tubs.....	3
Washout Closet Latrines.....	8
Bath Tubs.....	95

The following fixtures are to be deducted from the totals above, being placed on the Chelsea system this summer :

Water Closets.....	454
Slop Sinks.....	424
Bath Tubs.....	20
Wash Stands.....	7
Catch Basins.....	2

The following remodeled fixtures, according to law, are almost equal to new, and add greatly to the sanitary condition of the premises, and to the efficiency of the sewer system.

Remodeled old work :

Water Closets.....	369
Slop Sinks.....	236
Bath Tubs.....	58
Wash Stands.....	34
Urinals.....	24
New Ventilation Pipes.....	5
Remodeled Latrines.....	2

Respectfully,

WM. LUNN,
Inspector of Plumbing.

TABLE 28.

METEOROLOGICAL SUMMARY

For the Year Ending December 31, 1891, of Memphis, Tenn.;

Latitude N. 35 deg. 9'', Longitude W. 90 deg. 3'.

MONTH	Mean Actual Barometer	Mean Temperature	Mean Dew Point	Mean Relative Humidity	Precipitation	Total Move- ment of Wind	Av. hourly vel. of Wind in mls. per hour
January.....	29.79	44.2	37	87	7.33	5296	7.1
February.....	29.73	47.7	42	84	4.07	6194	9.2
March.....	29.68	48.0	40	80	7.37	6697	9.0
April.....	29.71	64.2	54	74	2.72	4920	7.0
May.....	29.74	68.2	58	74	1.75	4653	6.3
June.....	29.59	79.5	70	80	4.74	4169	5.8
July.....	29.70	77.0	69	81	6.06	3992	5.4
August.....	29.69	76.7	69	80	3.18	3975	5.3
September.....	29.78	74.9	63	74	0.56	3685	5.1
October.....	29.83	60.0	49	74	2.21	4868	6.5
November.....	29.80	49.2	40	78	4.79	5455	7.6
December.....	29.82	49.2	40	79	6.50	6407	8.6
Sums..	356.86	739.8	631	945	51.31	60311	82.9
Means	29.74	61.6	53	79	.....	.....	6.9

Highest Temperature 97°, June 28; lowest Temperature 20°, November 29.

First Frost, October 16; last Frost, April 4. Number of days free from Frost, 195.

W. M. WILSON,
Observer Weather Bureau.

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